MISSISSIPPI STATE UNIVERSITY

INVITATION FOR BIDS
OFFICE OF PROCUREMENT & CONTRACTS

1. INSTRUCTIONS FOR BIDDERS

a. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.

b. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.

c. Bidders shall submit their bids either electronically or in a sealed envelope.
   i. Sealed bids should include the bid number on the face of the envelope as well as the bidders' name and address. Bids should be mailed to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.
   ii. At this time we only accept non-ITS bids electronically. For electronic submission of bids, go to: https://www.ms.gov/dfa/contract_bid_search and use the RFX number on the next page as your reference number.

d. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

2. TERMS AND CONDITIONS

a. All bids should be bid "FOB Destination"

b. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here: https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf

c. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University's Standard Contract Addendum: https://www.procurement.msstate.edu/contracts/standardaddendum.pdf

Bid Number/RFX Number: 21-78/RFX#3160004474
Opening Date: August 17, 2021 @2:00 p.m.
Description: 15kV Pad Mounted Switchgear Units & Box Pads (Material Only)

Vendor Name: _____

Vendor Address: _____

Telephone Number: _____

Days the Offer is Firm: _____

Authorized Signature: _____

Name: _____

Title: _____

See following pages for specifications and bid pricing form.

Specifications & Materialman's Proposal
For
15 kV Pad-Mounted Switchgear Units & Box Pads
(Material Only)

July 22, 2021

Prepared for:

Mississippi State University
610 McArthur Hall
Mississippi State, Mississippi 39762

Prepared by:

Atwell & Gent, P.A.
309 University Drive
Starkville, Mississippi 39759

JEFFREY ATWELL
REGISTERED PROFESSIONAL
ENGINEER
14774
STATE OF MISSISSIPPI
07/22/2021

Job No.: 601E3072

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INSTRUCTION TO BIDDERS

15 KV PAD-MOUNTED SWITCHGEAR UNITS & BOX PADS (MATERIAL ONLY)
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

Bids that are sent by mail shall be clearly marked "Bid Enclosed" or "Bid Envelope Enclosed" as appropriate. The sealed envelope containing the bid shall have the following information shown on the envelope:

BID ENCLOSED
ITEM: 15 KV PAD-MOUNTED SWITCHGEAR UNITS & BOX PADS (MATERIAL ONLY)
OWNER: MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI
BIDDER: BIDDER'S ADDRESS
BID DUE: REFER TO ADVERTISEMENT FOR BIDS

Bids that are sent by parcel delivery service or hand-delivered should be addressed to:

Mr. Don Buffum, Director
Office of Procurements & Contracts
Mississippi State University
Barr Avenue, 610 McArthur Hall
Mississippi State, Mississippi 39762

Bids that are sent by mail should be addressed to:

Mr. Don Buffum, Director
Office of Procurements & Contracts
Mississippi State University
P.O. Box 5307
Mississippi State, Mississippi 39762

The Engineer for this project is:

Atwell & Gent, P.A.
P.O. Box 2558
Starkville, Mississippi 39760-2558
Telephone (662) 324-5658

The Engineer will represent the Owner in all matters pertaining to this project, including but not limited to, answering technical questions of prospective bidders and recommendations of lowest and best bid, acceptance of shop drawings and similar documents, and approval of invoices prior to payment by the Owner.

Submit all questions about the specifications to the Engineer, in writing. Replies will be issued to all prospective Bidders of Record. Neither the Engineer nor the Owner will be responsible for oral clarifications.

Bidders shall complete all blank spaces on the Materialman's Proposal Form for each item of equipment being bid in accordance with these specifications and terms and conditions. Bidder should insert the unit

price in the blank under the Unit Price heading and multiply this unit price by the number shown in the Number Required heading and enter the product of this multiplication in the blank under the heading Total Price for each bid item on the Materialman's Proposal Form. The bidder shall sum the Total Bid Price for each Bid Item and enter this sum in the Total Bid Price.

Bidder shall insert the delivery time in weeks after receipt of an order for each item of equipment bid in the blank provided on the Materialman's Proposal Form. Bidder shall also indicate equipment being bid by the manufacturer's name and catalog number in the blanks provided on the Proposal Form. Bidder shall indicate warranty term to be provided in the blanks on the Proposal Form. Finally, Bidder shall indicate the rated mechanical life (e.g. total number of open-close operations) of the substation voltage regulator in the blanks on the Proposal Form.

Bidder shall complete the Materialman's Proposal Form bound in these Specifications and shall submit two copies to the OWNER at the time that the bids are due. Bidders taking exceptions to any part of the specifications, conditions, or payment terms specified herein shall show such exception on the Materialman's Proposal Form in the space provided. If exceptions are not shown on the Proposal Form, Bidder must supply equipment specified herein under the terms and conditions specified herein. Proposal forms shall remain bound in the Specifications. Proposals that are modified, excepted, or in any way changed from the proposal that the OWNER is requesting in this request for proposals may be rejected by the OWNER.

It is intent of the OWNER to award the bid for these 15 KV PAD-MOUNTED SWITCHGEAR UNITS & BOX PADS (MATERIAL ONLY) to the bidder with lowest and best responsive bid for Bid Items #1 through #4 inclusive.

PROPOSAL FORM

15 KV PAD-MOUNTED SWITCHGEAR UNITS & BOX PADS (MATERIAL ONLY)
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

To: Mr. Don Buffum, Director
Office of Procurements & Contracts
Mississippi State University
Barr Avenue, 610 McArthur Hall
Mississippi State, Mississippi 39762

The undersigned (hereinafter called the MATERIALMAN) acknowledges by his signature that he has received and examined the documents entitled "Specifications and Materialman's Proposal for 15 KV PAD-MOUNTED SWITCHGEAR UNITS & BOX PADS (MATERIAL ONLY) for Mississippi State University (hereinafter called the OWNER), dated July 22, 2021, and has included the provisions of the Specifications in his Proposal. The MATERIALMAN further acknowledges that he has received the following addenda:

Addendum No. _____ Dated _____

The Materialman hereby proposes to sell and deliver to OWNER, upon the terms and conditions herein stated, the equipment specified in the attached specification for the following sums:

Bid Item	Description	Unit Price	No. Req'd	Unit	Total Price
1	15 kV Pad-Mounted Switchgear Unit, "431"	_____	1	EA	_____
2	15 kV Pad-Mounted Switchgear Unit, "523"	_____	2	EA	_____
3	Box Pad for "431" Pad-Mounted Switchgear Units	_____	1	EA	_____
4	Box Pad for "523" Pad-Mounted Switchgear Unit	_____	2	EA	_____

A. The total prices set forth above shall be firm if accepted by the OWNER within forty-five (45) days and shall include delivery to OWNER, ready for OWNER's use.

B. The prices set forth herein do not include any sums which are or which may be payable by the MATERIALMAN on account of taxes imposed by any taxing authority upon the sale, purchase, or use of the equipment. If any such tax is applicable to the sale, purchase, or use of the equipment, the amount thereof shall be added to the purchase price and paid by the OWNER.

C. The items included in each of the above bid prices are as follows:

BID ITEM NO. 1

MANUFACTURER: _____

CATALOG NO.: _____

BID ITEM NO. 2

MANUFACTURER: _____

CATALOG NO.: _____

BID ITEM NO. 3

MANUFACTURER: _____

CATALOG NO.: _____

BID ITEM NO. 4

MANUFACTURER: _____

CATALOG NO.: _____

D. The warranty for each of the above bid items shall be as follows:

BID ITEM NO. 1: _____

BID ITEM NO. 2: _____

BID ITEM NO. 3: _____

BID ITEM NO. 4: _____

E. The times of delivery shall be as follows:

BID ITEM NO. 1: _____

BID ITEM NO. 2: _____

BID ITEM NO. 3: _____

BID ITEM NO. 4: _____

F. Title of the equipment shall pass to the Owner upon:

1. Delivery to location specified.
2. Satisfactory inspection for in-transit damage.
3. Acceptance by the Owner.

G. The MATERIALMAN shall include engineering data with his proposal as specified and as required to evaluate bid.

H. Bidder hereby certifies that he is:

( ) Manufacturer

( ) Manufacturer's Authorized Mississippi Representative

I. Exceptions: _____

_____

J. It is understood by the undersigned that the OWNER retains the privilege of accepting or rejecting all or any part of this proposal and to waive any informalities or technicalities therein. Counter-proposals or qualified bids shall be subject to rejection at the discretion of the OWNER.

It is also understood by the undersigned that the OWNER reserves the right to conduct investigations to evaluate the proposals received and to award the bid for this equipment to the lowest Bidder, who in the OWNER's evaluation will provide the equipment which will be in the best interest of the OWNER.

MATERIALMAN:

BY: _____

TITLE: _____

COMPANY: _____

ADDRESS: _____

_____

TELEPHONE NO.: _____

EMAIL: _____

DATE SIGNED: _____

SPECIFICATION FOR 15 KV PAD-MOUNTED SWITCHGEAR UNITS

1.1 SCOPE

A. Section Includes:

1. Bid Items
2. References.
3. Submittals.
4. Quality Assurance.
5. Critical Requirements.
6. Construction.

1.2 BID ITEMS

A. Bid Item #1: S&C Electric Vista "431" Pad Mounted Switchgear Unit (Switchgear and Cabinet).

B. Bid Item #2: S&C Electric Vista "523" Pad Mounted Switchgear Unit (Switchgear and Cabinet).

1.3 REFERENCES

A. American National Standards Institute (ANSI):

1. ANSI C37.72 - Manually Operated, Dead Front Padmounted Switchgear with Load Interrupting Switches and Separable Connectors for Alternating Current Systems.
2. ANSI C37.112 -IEEE Standard Inverse-Time Characteristic Equations for Overcurrent Relays.
3. ANSI C57.12.28 - Pad-Mounted Equipment - Enclosure Integrity.

B. Institute of Electrical and Electronics Engineers:

1. IEEE 386 - Standard for Separable Insulated Connector Systems for Power Distribution Systems above 600 V.

C. National Electrical Manufacturers Association:

1. NEMA 260 - Safety Labels for Pad Mounted Switchgear and Transformers Sited in Public Areas.

1.4 SUBMITTALS

A. Submit catalog data on all equipment items specified in this section to be utilized on this Project.

B. Sufficient information, clearly presented shall be included to determine compliance with Drawings and Specifications.

C. The specific item proposed and its area of application shall be marked on the catalog cuts.

D. Shop Drawings: Indicate electrical characteristics and connection requirements, outline dimensions, connection and support points, weight, specified ratings and materials.

E. Product Data: Submit electrical characteristics and connection requirements, standard model design tests, and options.

F. Test Reports: Indicate procedures and results for specified factory and field testing and inspection.

1.5 QUALITY ASSURANCE

A. Furnish manufacturer's standard one-year warranty on pad mounted switchgear.

B. Switchgear shall be manufactured within the United States of America.

1.6 CRITICAL REQUIREMENTS

A. Product Description:

1. Bid Item #1: ANSI C37.72 pad mounted switchgear, 15 kV, 600 ampere, SF6 insulated, deadfront construction, with three switched ways and one fault interrupter way, suitable for installation where accessible by general public.
2. Bid Item #2: ANSI C37.72 pad mounted switchgear, 15 kV, 600 ampere, SF6 insulated, deadfront construction, with two switched ways and three fault interrupter ways, suitable for installation where accessible by general public.

B. Ratings:

1. System Voltage: 13.2 kV nominal, three phase, 60 Hz.
2. Maximum Design Voltage: 15.5 kV.
3. Insulation Type and Level: SF6 insulated, 95 kV BIL.
4. Main Bus and Switch Ampacity: 600 amperes, continuous.
5. Short Circuit Rating: 12,500 rms symmetrical amperes at rated nominal voltage.

C. Construction:

1. Single-sided Construction. All cable terminations shall be located on one side of the switchgear unit.
2. Cable Grounding: All ways, both load interrupter switch and fault interrupter, shall be three-position type (closed- open- ground).
3. Cabinet Height: Switchgear cabinet shall be low profile and in no case shall its overall height exceed 54".

D. Controls: Provide microprocessor-based overcurrent control for switchgear unit. Control shall incorporate ANSI C37.112 relay curves. Switchgear shall be capable of being programmed

using a laptop computer. The control shall at a minimum feature the following time-current characteristic (TCC) curves:

1. Standard "E" speed curves.
2. Standard "K" speed curves.
3. IEEE C37.112-1996 "U" relay curves. Time dial settings shall be available in 0.1 increments from 0.0 to 10.0.

Controls provided shall be manufacturer's most advanced model available.

E. Potential Indication with Test Feature: Provide LCD display to indicate presence of voltage on each phase, and solar panel to supply power for testing of complete voltage-indication circuit and phasing circuit. One potential indicator shall be provided for each bus-terminal, load interrupter switch, and fault-interrupter way.

1.7 CONSTRUCTION

A. Switching:

1. Bid Item #1: Three (3) three-pole load interrupter switches and one (1) three-pole fault interrupter switch.
2. Bid Item #2: Two (2) three-pole load interrupter switches and three (3) three-pole fault interrupter switches.

B. Switchgear Tank: Welded stainless steel.

C. Pad Mount Enclosure: Steel, conforming to requirements of ANSI C37.72 and C57.12.28.

D. Finish Color: The exterior of the unit shall be painted Carboline F235 Dark Bronze (or as accepted).

E. Load Interrupter Switches:

1. Three-position (closed-open-ground) type. The load interrupter switches shall provide three-pole live switching of 600-ampere three phase circuits.
2. Load interrupter switches shall provide a visible gap when open.
3. Operating shafts shall be pad lockable in any position. The operating shaft shall be capable of being locked to prevent operation to the ground position.
4. The load interrupter switches shall be furnished with a manual handle to charge the switch operating mechanism or to actuate the operating mechanism. Operating mechanism shall be capable of providing quick-make, quick break operation in either switching direction. The operating mechanism shall be designed to prevent inadvertent operation from the closed position directly to the ground position and vice versa.
5. Load interrupter switch terminals shall be equipped with three single pole 600-ampere bushings designed to ANSI/IEEE 386 Standards to accept all standard 600-ampere insulated deadbreak elbows.

F. Fault Interrupter Switches:

1. Three-phase resettable fault interrupters shall be provided in the switchgear for live switching of tap circuits and for fault interruption of tap circuits. Fault interrupters shall be vacuum or arc spinning contact type.

2. The fault interrupters shall be operated by a spring operating mechanism that is recharged with a manually operated handle. The operating mechanism shall operate independently of the speed of the manual handle. Trip indicators shall be provided on the fault interrupters that indicate the contact position is open. This indicator shall be fully visible through viewing windows in the switchgear tank.

3. Fault interrupters shall provide three-pole fault interruption and three-pole load switching.

4. The fault interrupters shall be non-reclosing, manual reset devices. An electronic assembly shall sense load and fault current on each phase of the load tap circuits. The electronic control shall be powered from current transformers mounted inside of the SF6 insulated switchgear tank. No external power source shall be required for overcurrent protection.

5. Fault interrupter switch terminals shall be equipped with three single pole 200-ampere bushings designed to ANSI/IEEE 386 Standards to accept all standard 200-ampere insulated loadbreak elbows.

G. Grounding Lugs: Furnished with one ground pad installed on switchgear unit and one ground pad installed on pad mount enclosure. Ground pads shall be NEMA two-hole type.

H. Labeling: Furnish safety labels in accordance with NEMA 260.

I. Accessories:

1. Mounting Provisions for Fault Indicator: Provide mounting provisions for fault indicators installed on each phase of load interrupter switches. Provide viewing windows for fault LED indicating lights for each phase of all load interrupter switches (e.g. three (3) per load interrupter switch).

2. Potential Indication with Test Feature: Provide LCD display to indicate presence of voltage on each phase, and solar panel to supply power for testing of complete voltage-indication circuit and phasing circuit. One potential indicator shall be provided for each bus-terminal, load interrupter switch, and fault-interrupter way.

J. Controls: Provide standard microprocessor-based overcurrent control for switchgear unit. Control shall incorporate ANSI C37.112 relay curves. Switchgear shall be capable of being programmed using a laptop computer. The control shall at a minimum feature the following time-current characteristic (TCC) curves:

1. Standard "E" speed curves.
2. Standard "K" speed curves.
3. IEEE C37.112-1996 "U" relay curves. Time dial settings shall be available in 0.1 increments from 0.0 to 10.0.

Controls provided shall be manufacturer's most advanced model available. Switchgear shall be furnished with all required Windows-compatible software and programming cables,

adapters, and all other components required to field program control from standard laptop computer.

K. Demonstration and Field Training: Manufacturer shall include four hours of on-site training by a factory authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain medium-voltage switchgear units and controls.

SPECIFICATION FOR BOX PADS FOR 15 KV PAD-MOUNTED SWITCHGEAR UNITS

1.1 SCOPE

A. Section Includes:

1. Bid Item.
2. References.
3. Submittals.
4. Box Pad.

1.1 BID ITEMS

A. Bid Item #3: Box Pad for S&C Electric Vista "431" Pad Mounted Switchgear Unit.

B. Bid Item #4: Box Pad for S&C Electric Vista "523" Pad Mounted Switchgear Unit.

1.2 REFERENCES

A. ASTM International:

1. ASTM C857-07 "Practice ASTM C857-07 "Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures".
2. ASTM C858-07 "Specifications for Underground Precast Concrete Utility Structures".

1.3 SUBMITTALS

A. Submit catalog data on all equipment items specified in this section to be utilized on this Project.

B. Sufficient information, clearly presented shall be included to determine compliance with Drawings and Specifications.

C. The specific item proposed and its area of application shall be marked on the catalog cuts.

D. Shop Drawings: Indicate electrical characteristics and connection requirements, outline dimensions, connection and support points, weight, specified ratings and materials.

E. Product Data: Submit electrical characteristics and connection requirements, standard model design tests, and options.

F. Test Reports: Indicate procedures and results for specified factory and field testing and inspection.

1.4 CONSTRUCTION

A. Manufacturers:

1. Bid Item #3: Concast, Catalog No. FC-69-83-36-V or equal.
2. Bid Item #4: Concast, Catalog No. FC-69-106-36-V or equal.

B. Substitutions: None.

C. Product Description:

1. Bid Item #3: Precast concrete box pad shall be constructed of non-corrosive polymer or fiberglass reinforced cement mortar. Box pad shall be designed, detailed, and fabricated in accordance with the requirements of this specification and shall be sized and designed to accommodate S & C Electric Company "Vista "UDS Switchgear, 15.5 kV, 12,5 kA, Model "431" pad-mounted switchgear units or for switchgear furnished under Bid Item #1.
2. Bid Item #4: Precast concrete box pad shall be constructed of non-corrosive polymer or fiberglass reinforced cement mortar. Box pad shall be designed, detailed, and fabricated in accordance with the requirements of this specification and shall be sized and designed to accommodate S & C Electric Company "Vista "UDS Switchgear, 15.5 kV, 12,5 kA, Model "523" pad-mounted switchgear units or for switchgear furnished under Bid Item #1.

D. Dimensions:

1. Bid Item #3: Top dimensions of box pad shall be approximately 83" X 69". The depth of the box pad shall be 36" minimum. The box pad shall have a center opening for cable entry, exit and training.
2. Bid Item #4: Top dimensions of box pad shall be approximately 106" X 69". The depth of the box pad shall be 36" minimum. The box pad shall have a center opening for cable entry, exit and training.

E. Construction:

1. Concrete Composite: Molded of sand and aggregate, bound together with a polymer resin, and reinforced with steel or fiberglass or a combination of the two.
2. Finish: Box and cover color shall have natural gray finish.
3. Load Rating: Box pad shall be designed to support the weight of the aforementioned pad mounted switchgear unit, to withstand soil pressures on sidewalls, to create a vault for training and operation of cables, and to provide a flat, rigid surface for mounting and fastening pad mounted switchgear unit. Box pad shall be designed for soil pressures using ASTM C857.

F. Accessories: Box pad shall be equipped with non-corrosive fasteners for mounting pad mounted switchgear. Surface shall be flat to within 1/16" across top surface. Top edge to be 45° chamfer.